

THIS PROJECT INVOLVES THE INSTALLATION OF LED COUNTDOWN
PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS, AND SIGNS AT THE
INTERSECTION OF US 40 (BALTIMORE NATIONAL PIKE) AND NORMANDY
WOODS DRIVE/NORMANDY CENTER DRIVE IN HOWARD COUNTY.
US 40 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

THIS INTERSECTION CURRENTLY OPERATES IN A NEMA EIGHT-PHASE FULL-TRAFFIC-ACTUATED MODE. EXCLUSIVE LEFT TURN PHASES ARE PROVIDED ON EB AND WB US 40. EXCLUSIVE-PERMISSIVE LEFT TURNS ARE PROVIDED ON NORMANDY CENTER DRIVE AND NORMANDY WOODS DRIVE. AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED FOR THE EAST LEG OF THE INTERSECTION. A CONCURRENT PEDESTRIAN PHASE IS PROVIDED FOR THE SOUTH LEG OF THE INTERSECTION.

THE EXISTING FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET WILL BE USED. AN APS CENTRAL CONTROL UNIT WILL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY THE SHA.

APS WILL FUNCTION AS FOLLOWS:

FOR BALTIMORE NATIONAL PIKE:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS BALTIMORE NATIONAL AT NORMANDY WOODS. **WAIT.**"
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

FOR NORMANDY WOODS:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS NORMANDY WOODS AT BALTIMORE NATIONAL. WAIT."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

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MR. RICHARD L. DAFF, SR.	MR. ROBERT SNYDER
CHIEF, TRAFFIC OPERATIONS	ASSISTANT DIVISION CHIEF
DIVISION	TRAFFIC OPERATIONS
PHONE: (410)787-7630	(410)787-7630

MR. ED RODENHIZER	MR. EUGENE BAILEY
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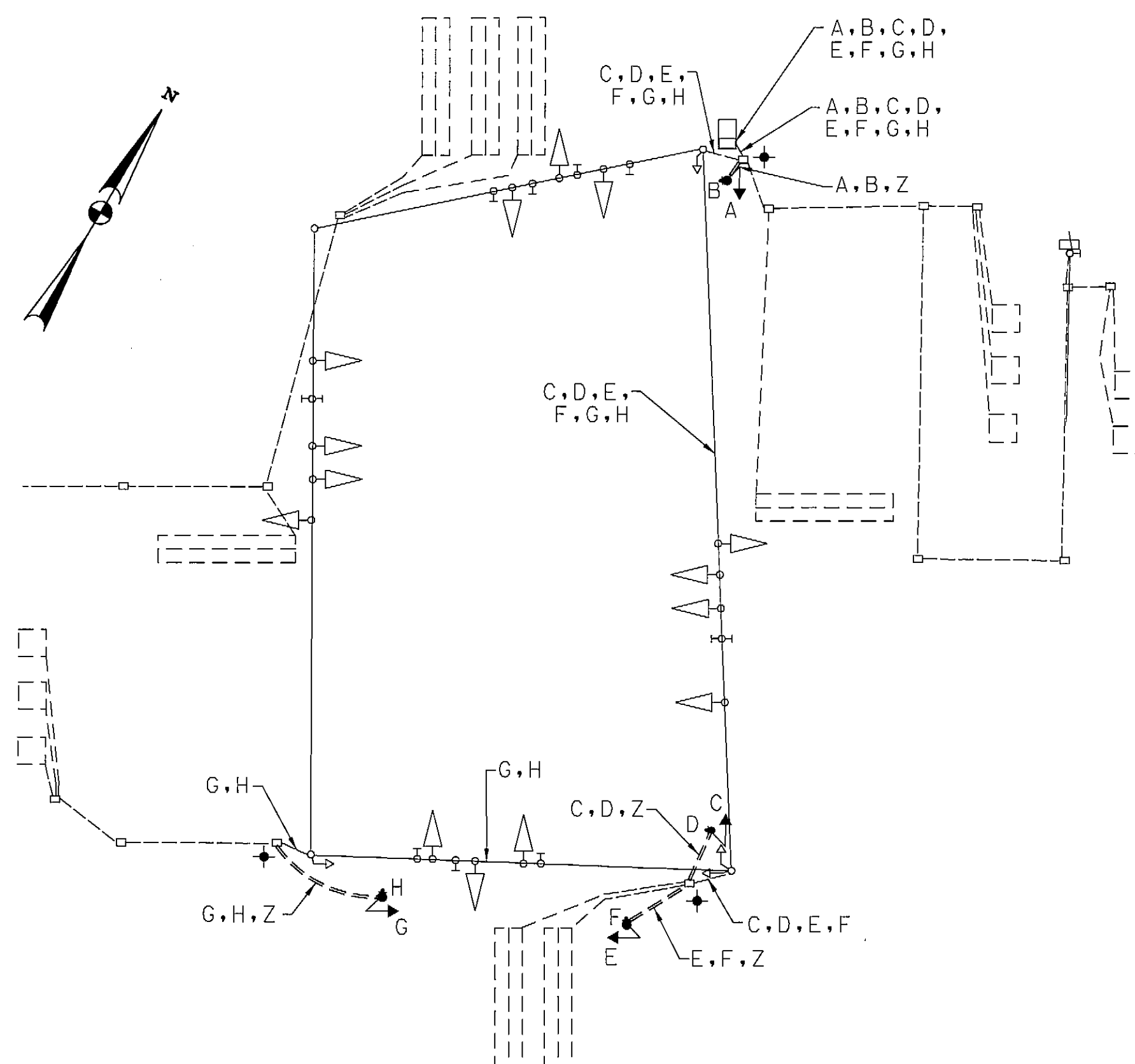
A. EQUIPMENT TO BE SUPPLIED BY THE SHA.
NONE

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

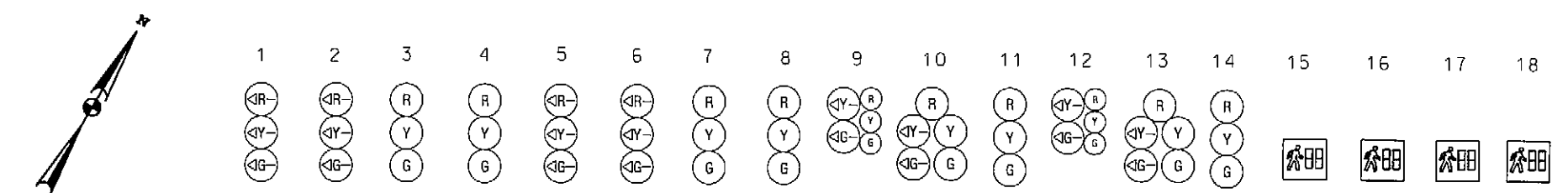
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1001	REMOVAL OF EXISTING PAVEMENT LINE MARKINGS, ANY WIDTH	LF	680
2002	TEST PIT EXCAVATION	CY	4
5005	12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	LF	380
8001	AUDIBLE / TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS	EA	4
8002	BREAKAWAY PEDESTAL POLE - ANY SIZE	EA	4
8003	FURNISH AND INSTALL 2 WIRE CONTROL UNIT	EA	1
8004	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEADS	EA	4
8005	PEDESTRIAN EDUCATION SIGN	SF	4
8007	REMOVE AND DISPOSE PER ASSIGNMENT	EA	1
8011	ADJUST EXISTING HANDHOLE	EA	1
8012	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	85
8013	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	85
8018	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH	EA	3
8020	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	1200
8021	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	1200

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND RETURNED TO SHA.

ALL MATERIALS AND EQUIPMENT REMOVED BY THE
CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.



A, C, E, G	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	Z	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
B, D, F, H	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)	+	PROPOSED GROUND ROD



PHASE 1 & 5	←G←	←G←	R	R	←R←	←R←	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6																				
PHASE 1 & 6	←G←	←G←	G	G	←R←	←R←	R	R	R	R	R	R	R	R	R	WK	WK	DW	DW	
PED CLEARANCE/ COUNTDOWN	←G←	←G←	G	G	←R←	←R←	R	R	R	R	R	R	R	R	R	FL/DW	FL/DW	DW	DW	
1 & 6 CHANGE	←Y←	←Y←	Y	Y	←R←	←R←	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	
PHASE 2 & 5	←R←	←R←	R	R	←G←	←G←	G	G	R	R	R	R	R	R	R	DW	DW	DW	DW	
2 & 5 CHANGE	←R←	←R←	R	R	←Y←	←Y←	Y	Y	R	R	R	R	R	R	R	DW	DW	DW	DW	
PHASE 2 & 6	←R←	←R←	G	G	←R←	←R←	G	G	R	R	R	R	R	R	R	WK	WK	DW	DW	
PED CLEARANCE/ COUNTDOWN	←R←	←R←	G	G	←R←	←R←	G	G	R	R	R	R	R	R	R	FL/DW	FL/DW	DW	DW	
2 & 6 CHANGE	←R←	←R←	Y	Y	←R←	←R←	Y	Y	R	R	R	R	R	R	R	DW	DW	DW	DW	
PHASE 3 & 7	←R←	←R←	R	R	←R←	←R←	R	R	←R←	←R←	←R←	←R←	←R←	←R←	←R←	DW	DW	DW	DW	
CHANGES TO PHASES 3 & 8, 4 & 7 OR 4 & 8																				
PHASE 3 & 8	←R←	←R←	R	R	←R←	←R←	R	R	←G←	←G←	G	R	R	R	R	DW	DW	DW	DW	
3 & 8 CHANGE	←R←	←R←	R	R	←R←	←R←	R	R	←Y←	←Y←	Y	R	R	R	R	DW	DW	DW	DW	
PHASE 4 & 7	←R←	←R←	R	R	←R←	←R←	R	R	R	R	R	←G←	←G←	G	DW	DW	DW	DW	DW	
4 & 7 CHANGE	←R←	←R←	R	R	←R←	←R←	R	R	R	R	R	←Y←	←Y←	Y	DW	DW	DW	DW	DW	
PHASE 4 & 8	←R←	←R←	R	R	←R←	←R←	R	R	G	G	G	G	G	G	G	DW	DW	DW	DW	
4 & 8 CHANGE	←R←	←R←	R	R	←R←	←R←	R	R	Y	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	
PHASE 3 & 8 ALT	←R←	←R←	R	R	←R←	←R←	R	R	←G←	←G←	G	R	R	R	R	DW	DW	WK	WK	
PED CLEARANCE/ COUNTDOWN	←R←	←R←	R	R	←R←	←R←	R	R	←G←	←G←	G	R	R	R	R	DW	DW	FL/DW	FL/DW	
3 & 8 ALT CHANGE	←R←	←R←	R	R	←R←	←R←	R	R	←Y←	←Y←	Y	R	R	R	R	DW	DW	DW	DW	
PHASE 4 & 8 ALT	←R←	←R←	R	R	←R←	←R←	R	R	G	G	G	G	G	G	G	DW	DW	WK	WK	
PED CLEARANCE/ COUNTDOWN	←R←	←R←	R	R	←R←	←R←	R	R	G	G	G	G	G	G	G	DW	DW	FL/DW	FL/DW	
4 & 8 ALT CHANGE	←R←	←R←	R	R	←R←	←R←	R	R	Y	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	
FLASHING OPERATION	FL ←R←	FL ←R←	FL/Y	FL/Y	FL ←R←	FL ←R←	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
3. ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MUST BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
5. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
6. ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7652 TO COORDINATE.
7. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.09 AND FIGURE 4E.2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNAL GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
8. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
9. PUSHBUTTON IS TO BE LOCATED SO THAT A PEDESTRIAN IN A WHEELCHAIR LOCATED ON THE LEVEL LANDING AREA DOES NOT HAVE TO REACH MORE THAN 18".
10. THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
11. PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
US 40 (BALTIMORE NATIONAL PIKE) AT
NORMANDY WOODS DR/NORMANDY CTR DR
ELLCOTT CITY, MARYLAND

REVISIONS		GENERAL INFORMATION SHEET			
		SCALE <u>NONE</u>		DATE <u>AUGUST 2010</u>	CONTRACT NO. <u>AX7065168</u>
		DESIGNED BY <u>SK</u>		COUNTRY <u>HOWARD</u>	
		DRAWN BY <u>SK</u>		LOGMILE <u>13004019.25</u>	
		CHECKED BY <u>BJG</u>		TIMS NO. <u>J828</u>	
		FAP NO. <u> </u>		TOD NO. <u> </u>	
TS NO. <u>479H-GI</u>		DRAWING		SG-2 OF <u>2</u>	SHEET NO. <u> </u> OF <u> </u>

PLOTTED: Monday, August 16, 2010 AT 03:52 PM
FILE: \\Fkkm\vc2007\2007\070956_shahda\task01_ADA\CADD\Traffic\PLANS\US 40 @ Normandy Woods Drive.pgl-P000 US40@Normandy.dgn

BY: BJG